

Graphs, Charts and Tables

Skill	Achieved ?
Know that a tally mark is a way of counting	
Know that a frequency table is a way of recording how many times something happens	
Draw or fill out a frequency table	
Work out the mean, median, mode and range from a frequency table	
Know what a bar chart is and be able to draw one	
Know what a line graph is and be able to draw one	
Know what a pie chart is	
Interpret information from a pie chart	
Compare 2 pie charts	
Know what a scattergraph is and be able to draw one	
Know what a best-fitting straight line is and draw one on a scattergraph	
Use a best-fitting straight line to estimate the value of one variable when told the value of the other variable	
Know the meaning of positive correlation, negative correlation and no correlation in a scattergraph	
Know what a stem-and-leaf diagram is and draw one	
Interpret information in a stem-and-leaf diagram, for example, by identifying the mode	
Know what an ordered stem-and-leaf diagram is and draw one	
Know that a back-to-back stem-and-leaf diagram compares two data sets and consists of 2 stem-and-leaf diagrams drawn together sharing a common stem	
Draw a back-to-back stem-and-leaf diagram	
Compare 2 data sets in a back-to-back stem-and-leaf diagram	
Interpret information in a stem-and-leaf diagram	
Know what a dotplot is and interpret data from it	
Interpret other type of graphs	
Know the meaning of trend	
Describe the trend in a statistical diagram or other graph	

Time, Distance and Speed

Skill	Achieved ?
Know that time is a measure of how long something lasts	
Know that units of time include seconds (s), minutes (min), hours (hr), days (d), weeks (wk), months (mth), years (y) and know how these are related: $1 \text{ min} = 60 \text{ s}$ $1 \text{ hr} = 60 \text{ min}$ $1 \text{ day} = 24 \text{ hr}$ $1 \text{ year} = 365 \text{ days}$ $1 \text{ leap year} = 366 \text{ days}$	
Know that there are 52 weeks in a year	
Change between different units of time, especially from minutes to hours and vice versa	
Know the 7 days of the week and their order	
Know the 12 months of the year and their order	
Know how many days there are in each month	
Know what 12-hour time is and how it is written	
Know what 24-hour time is and how it is written	
Change 12-hour time to 24-hour time	
Change 24-hour time to 12-hour time	
Work out time differences, including those on bus and train timetables, in the same day or over midnight	
Know that distance is a measure of how far away something is	
Know that units of distance are the same as those of length	
Know that speed is a measure of how fast something moves	
Know that units of speed include miles per hour (mph) and kilometres per hour (kph)	
Calculate distance D when told speed S and time T by using the equation: $D = S \times T$	
Calculate distance without a calculator when, for example, $S = 40$ miles per hour and $T = 2.75$ hours	
Know what a mileage chart is and be able to use one	
Given distance and time, work out speed using the equation:	

$S = \frac{D}{T}$	
Calculate speed without a calculator when, for example, $D = 300$ metres and $S = 5$ metres per second	
Given distance and speed, work out time using the equation:	
$T = \frac{D}{S}$	
Calculate time without a calculator when, for example, $D = 1\,500$ metres and $S = 6$ metres per second	
Calculate average speed using a distance-time graph	
Know that a horizontal line on a distance-time graph means the object has stopped moving	

Integers

Skill	Achieved ?
Know that an <i>integer</i> is a whole number or a negative whole number	
Know that <i>temperature</i> is a measure of how hot or cold something is	
Know that units of temperature include <i>degrees Celsius (°C)</i> and <i>degrees Fahrenheit (°F)</i>	
Read temperature from a thermometer	
Work out differences in temperature	
Add and subtract 2 integers without a calculator	
Multiply and divide 2 integers without a calculator	
Multiply 3 or more integers	
Solve BODMAS problems involving integers	

Statistics and Probability

Skill	Achieved ?
Know that a data set is a list of things (usually numbers)	
Know that the mode is the most common thing and work out the mode from a list of numbers	
Work out the mean (average) using the equation: <i>Mean = Total ÷ How many numbers there are</i>	
Know that the median of a data set is the middle number when the list is arranged from lowest to highest; in the case of 2 numbers being in the middle, the average of these is taken to find the median	
Calculate the mean of a data set that includes 0 and negative numbers	
Calculate the range of a data set using the equation: <i>Range = Highest number - Lowest number</i>	
Compare the mean of 2 data sets	
Compare individual data points with the mean or mode	
Calculate the median, mean, mode and range from a frequency table	
Work out the median and range from an ordered stem-and-leaf-diagram	
Know that probability measures the likelihood (the 'chances') of something (event or outcome) happening	
Know that probability is calculated using the equation: $\text{Probability} = \frac{f}{t}$ Where f = number of favourable outcomes and t = total number of outcomes	
Know that probability can be expressed in any of the following forms: fraction decimal percentage	
Know that a probability expressed as a fraction always has the numerator less than or equal to the denominator	
Know that probability expressed as a decimal always has a value between 0 and 1 (including both these values)	

Know that probability expressed as a percentage has a value between 0 % and 100 % (including both these values)	
Know that a probability of 0 (or 0 %) means no chance of a given event occurring	
Know that a probability close to 0 (or 0 %) means (very) unlikely to happen	
Know that a probability of 1 (or 100 %) means certainty	
Know that a probability close to 1 (or 100 %) means (very) likely to happen	
Calculate the probability of simple events (such as obtaining a 5 from rolling a fair 6-sided die numbered from 1 to 6), leaving the answer as a fraction	
Calculate the probability of a value occurring in a frequency table, leaving the answer as a fraction	

Pythagoras' Theorem

Skill	Achieved ?
Know that, in a right-angled triangle, the side opposite the right angle is called the hypotenuse	
Know that the hypotenuse is the longest side	
Know the Theorem of Pythagoras (aka Pythagoras' Theorem), namely, that in a right-angled triangle, the square of the hypotenuse c equals the sum of the squares of the other 2 sides a and b , i.e. : $c^2 = a^2 + b^2$	
Use Pythagoras' Theorem to calculate the hypotenuse when told the shorter sides	
Use Pythagoras' Theorem to calculate a shorter side when told the hypotenuse and a shorter side	
Solve contextual problems involving Pythagoras' Theorem	

Angles and Bearings

Skill	Achieved ?
Know that an angle is the shape made by 2 lines (arms) sharing a common endpoint and that a unit of angle is the degree	
Know that an acute angle is strictly between 0° and 90° , an obtuse angle is strictly between 90° and 180° and a reflex angle is strictly between 180° and 360°	
Know that a right angle has 90°	
Work out a missing angle at a right angle	
Know that a straight line has 180°	
Work out a missing angle at a straight line	
Know that a circle has 360°	
Work out a missing angle in a circle	
Know that the four cardinal compass directions are, North, South, East and West and know in which direction they point	
Know that four of the intercardinal compass directions are North East (NE), North West (NW), South East (SE) and South West (SW) and know in which direction they point	
Know that a bearing is an angle (i) written using 3 digits (ii) measured clockwise from a North line	
Work out the bearing of a point B from a point A by calculating a missing angle	
Know that parallel lines are ones that never meet	
Know that a transversal is a line that crosses 2 or more lines at different points	
Know that corresponding angles (aka F-angles) are formed when a transversal crosses a pair of parallel lines	
Know that corresponding angles are equal	
Know that alternate angles (aka Z-angles) are formed when a transversal crosses a pair of parallel lines	
Know that alternate angles are equal	
Know that vertically opposite angles (aka X-angles) are formed when two straight lines cross each other	
Know that vertically opposite angles are equal	
Know that the 3 angles in any triangle add up to 180°	
Find a missing angle in a triangle when told the other 2 angles	
Find missing angles in various geometric figures, especially quadrilaterals	